

FINAL ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-10, 12, 13, 17 and 19-26 and 28-32 in the reply filed on July 23, 2009 is acknowledged. The traversal is on the ground(s) that Groups I and II can only be performed with the apparatus of claim 11, and, conversely, the apparatus can only be used to perform the method of claim 1, wherein the Examiner has purported to base the Restriction Requirement on the allegation that the claims do not distinguish patentably over the prior art of record. However, merely because two claims might be rejected in a future Office Action is not a basis for asserting that the claims are restrictable. This is not found persuasive because this Application is a National Stage entry of PCT/US05/09653 and is subject to PCT rules and regulations, most notably PCT 13.1 and 13.2 (See MPEP 1896 IV and 37 CFR 1.475). Under these guidelines, a group of inventions must relate to a single general inventive concept under PCT 13.1, because under PCT Rule 13.2, they must contain the same or corresponding special technical feature, wherein a special technical feature is defined as meaning those technical features that define over the prior art. As set forth on page 3 of the Office Action filed on June 23, 2009 McVey discloses this special technical feature in the International Publication No. WO 02/066082. Therefore, the single inventive concept cannot be considered a special technical feature because it does not make a contribution over the prior art.
2. The requirement is still deemed proper and is therefore made FINAL.

3. Claims 11, and 27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on July 23, 2009.

4. Newly submitted claims 31 and 33 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: This Application is a National Stage entry of PCT/US05/09653 and is subject to PCT rules and regulations, most notably PCT 13.1 and 13.2 (See MPEP 1896 IV and 37 CFR 1.475). Under these guidelines, a group of inventions must relate to a single general inventive concept under PCT 13.1, because under PCT Rule 13.2, they must contain the same or corresponding special technical feature, wherein a special technical feature is defined as meaning those technical features that define over the prior art. As set forth on page 3 of the Office Action filed on June 23, 2009 McVey discloses this special technical feature in the International Publication No. WO 02/066082. Further, as set forth below, Wasinger (U.S. Publication No. 2003/0143108) discloses this special technical feature as well.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 31 and 33 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 12 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wasinger (U.S. Publication No. 2003/0143108).

Wasinger discloses a method of deactivating biological or chemical agents in a large volume space with a convoluted configuration (Figure 1; paragraphs 15-19 and 23), the method comprising:

Isolating the space (paragraph 25);

Introducing a deactivation gas into a plurality of subregions of the isolated space, which subregions are interconnected and open to each other in such a manner that air flows between the subregions (paragraphs 22 & 23; building disclosed as having offices wherein said offices will intrinsically be open to each other);

Circulating the deactivation gas from a subregion to its adjoining subregions (paragraph 22; Figure 1);

Sensing concentrations of the deactivation gas at a plurality of points (22) around the isolated space (paragraph 22);

Based on the sensed concentrations, controlling the introducing of the deactivation gas, and the circulating of the deactivation gas from subregion to adjoining subregion such that the deactivation gas concentration in each of the subregions is maintained above a preselected minimum concentration and below a preselected maximum concentration with a computer processor (paragraphs 16 and 23; ozone is provided to kill bacteria yet preserve integrity of items in the building (i.e. min and max), wherein the HVAC unit is controlled by the processor and circulates the ozone);

Continuing to introduce and circulate the gas until any biological or chemical agents in the space are deactivated (See paragraphs 15-28).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-5, 7, 8, 10, 13-19, 21, 24, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wasinger (U.S. Publication No. 2003/0143108) in view of McVey (International Publication No. WO 02/066082).

Concerning claims 3 and 19, Wasinger is relied upon as set forth above, wherein the reference discloses a method of deactivating biological agents in a large volume space with a convoluted configuration comprising:

Isolating the space and introducing a deactivation gas into a plurality of subregions of the isolated space, which subregions are physically interconnected;

Circulating the deactivation gas within each subregion and from adjoining subregion to adjoining subregions, and continuing to introduce and circulate the deactivation gas until any biological or chemical agent in the space is deactivated (For appropriate support, see claim 1). Wasinger does not appear to disclose employing a plurality of exhaust fans for exhausting the air, spent deactivation gas, and deactivation gas at a plurality of locations within the isolated space and controlling the exhaust fans to control flow of the deactivation gas from one subregion to an adjoining subregion.

McVey discloses a method of deactivating chemical or biological agents in a large volume space (page 1, lines 1-8), the method comprising:

Introducing a deactivation gas into the space (page 11, lines 33-37; page 12, lines 1-10);

Circulating the deactivation gas within the space; and

Continuing to introduce and circulate the deactivation gas until any biological or chemical agents in the space are deactivated (page 14, lines 9-16). McVey discloses that the space is a sealed enclosure or a large volume space such as a building (page 5, lines 20-25; page 11, lines 24-33). McVey continues to disclose employing a plurality of exhaust fans for exhausting the air, spent deactivation gas, and deactivation gas at a

plurality of locations within the isolated space and controlling the exhaust fans to control flow of the deactivation gas from one area to another in order to ensure that all potentially contaminated surfaces are introduced to the decontamination gas (page 11, lines 23-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Wasinger to include the step of employing a plurality of exhaust fans for exhausting the air, spent deactivation gas, and deactivation gas at a plurality of locations within the isolated space and controlling the exhaust fans to control flow of the deactivation gas from one subregion to an adjoining subregion in order to ensure that all potentially contaminated surfaces from one subregion to an adjoining subregion are introduced to the decontamination gas as exemplified by McVey.

With regard to claim 2, Wasinger does not appear to disclose exhausting air, spent deactivation gas, and deactivation gas from the space and trapping any entrained biological or chemical agents in the exhausted air, spent deactivation gas, and deactivation gas. However, McVey continues to disclose exhausting air, spent deactivation gas, and deactivation gas from the space and trapping any entrained biological or chemical agents in the exhausted air, spent deactivation gas, and deactivation gas in order to return the space to useful activity more quickly (page 14, lines 15-38; page 15, lines 1-7). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Wasinger to include the step of exhausting air, spent deactivation gas, and deactivation gas from the space and trapping any entrained biological or chemical agents in the exhausted air, spent

deactivation gas, and deactivation gas in order to return the space to useful activity more quickly as exemplified by McVey.

Concerning claims 4 and 13, Wasinger does not appear to disclose sensing a temperature at a plurality of locations around the space and in each of the subregions; and wherein the preselected maximum concentration in each subregion is a saturation of condensation concentration at the sensed temperature in the subregion.

Nonetheless, McVey also discloses sensing a temperature at a plurality of locations around the space and in each of the subregions; and wherein the preselected maximum concentration in each subregion is a saturation of condensation concentration at the sensed temperature in the subregion in order to prevent the decontamination gas from condensing which reduces the efficiency of the decontamination process (page 8, lines 1-10; page 15, lines 15-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Wasinger to sense a temperature at a plurality of locations around the space and in each of the subregions; and wherein the preselected maximum concentration in each subregion is a saturation of condensation concentration at the sensed temperature in the subregion in order to prevent the decontamination gas from condensing which reduces the efficiency of the decontamination process as exemplified by McVey. Concerning claim 7, Wasinger continues to disclose that the deactivation gas includes a hydrogen peroxide vapor (paragraph 28)

With regard to claims 7, 8, 10 and 15-17, Wasinger does not appear to disclose that the deactivation gas is introduced by vaporizing a liquid hydrogen peroxide

concentrate to generate the deactivation gas, and exhausting the space to bring said space to a negative pressure before introducing the deactivation gas. McVey however, continues to disclose that the deactivation gas is introduced by vaporizing a liquid hydrogen peroxide concentrate within an HVAC system to generate the deactivation gas, and exhausting the space to bring said space to a negative pressure before introducing the deactivation gas (page 14, lines 5-11; page 6, lines 20-35; page 5, lines 20-35) in order to produce an appropriate deactivating gas and prevent biological agents from exiting the space. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to introduce the deactivation gas by vaporizing a liquid hydrogen peroxide concentrate to generate the deactivation gas, and exhausting the space to bring said space to a negative pressure before introducing the deactivation gas in order to produce an appropriate deactivating gas and prevent biological agents from exiting the space as exemplified by McVey.

Concerning claims 5 and 14, Wasinger does not appear to disclose that the circulation of the deactivating gas with the fans among the subregions is controlled with a computer processor using flow dynamics modeling. Nonetheless, McVey also discloses that controlling the introduction and circulation of the deactivation agent with the fans includes flow dynamics modeling with a computer in order to ensure that an optimum amount of deactivating gas reaches all areas inside said space (page 15, lines 30-37; page 16, lines 1-20). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the processor of Wasinger in a manner such that the step of controlling and circulating the deactivation gas includes controlling

the introduction and circulation of the deactivation agent with a computer processor that utilizes flow dynamics modeling in order to ensure that an optimum amount of deactivating gas reaches all areas inside said space as exemplified by McVey.

Concerning claim 21, Wasinger continues to disclose that the space is an elongated space and includes multiple interconnected floors with a free flow of air between floors (paragraphs 16 and 23).

With regard to claim 24, Wasinger does not appear to disclose that the circulating step includes controlling a speed and orientation of a plurality of fans to move the deactivation gas between the subregions to maintain a concentration of the deactivation gas between a preselected minimum and a preselected maximum throughout the space in order to ensure that an optimum amount of deactivating gas reaches all areas inside said space (page 11, lines 23-37). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the circulating step of Wasinger to include controlling a speed and orientation of a plurality of fans to move the deactivation gas between the subregions to maintain a concentration of the deactivation gas between a preselected minimum and a preselected maximum throughout the space in order to ensure that an optimum amount of deactivating gas reaches all areas inside said space as exemplified by McVey.

With regard to claim 29, Wasinger discloses a method of deactivating biological agents in a large volume space with a plurality of fluidly interconnected subregions among which subregions air flows freely (paragraphs 16, 22 and 23), the method comprising;

Isolating the space (paragraph 25);

With a computer, monitoring a plurality of gas sensors around the space (paragraph 22); and

With the computer, controlling the deactivation gas generator to introduce gas into the subregions (paragraph 22).

Wasinger does not appear to disclose that the computer is utilized to perform flow dynamics modeling routines and control the deactivation gas generator in accordance with the modeling routine to introduce the deactivation gas, as well as controlling the exhaust fans for drawing deactivation gas out of the space in accordance with said modeling routine and controlling circulation fans to circulate the deactivation gas from subregion to subregion in accordance with deactivation gas concentration sensors and said modeling routine. McVey discloses a method of deactivating chemical or biological agents in a large volume space (page 1, lines 1-8), the method comprising:

Introducing a deactivation gas into the space (page 11, lines 33-37; page 12, lines 1-10);

Circulating the deactivation gas within the space; and

Continuing to introduce and circulate the deactivation gas until any biological or chemical agents in the space are deactivated (page 14, lines 9-16). McVey discloses that the space is a sealed enclosure or a large volume space such as a building (page 5, lines 20-25; page 11, lines 24-33). McVey continues to disclose utilizing a computer to:

Monitor a plurality of deactivation gas concentration sensors around the space
(page 7, lines 30-35);

Perform flow dynamics modeling routines (page 15, lines 30-37; page 16, lines 1-20);

Control deactivation gas generators in accordance with the flow dynamics
modeling routine to introduce a deactivation gas into the space (page 16, lines 9-20);

Control exhaust fans in accordance with the flow dynamics modeling routine for
drawing deactivation gas out of the space (page 15, lines 15-38); and

Controlling circulation fans to circulate the deactivation gas around the space in
accordance with the sensed deactivation gas concentrations and the dynamic flow
modeling routine in order to ensure that an optimum amount of deactivating gas
reaches all areas inside said space (page 16, lines 1-20). Thus, it would have been
obvious to one of ordinary skill in the art at the time of the invention to modify the
method of Wasinger to utilize the computer to control the deactivation gas generator in
accordance with the modeling routine to introduce the deactivation gas, as well as
control the exhaust fans for drawing deactivation gas out of the space in accordance
with said modeling routine and control circulation fans to circulate the deactivation gas
from subregion to subregion in accordance with deactivation gas concentration sensors,
which are located in a plurality of areas around said space, and said modeling routine in
order to ensure that an optimum amount of deactivating gas reaches all areas inside
said space as exemplified by McVey.

With regard to claim 18, Wasinger does not appear to disclose exhausting air, spent deactivation gas, and deactivation gas from the space and trapping any entrained biological or chemical agents in the exhausted air, spent deactivation gas, and deactivation gas. However, McVey continues to disclose exhausting air, spent deactivation gas, and deactivation gas from the space and trapping any entrained biological or chemical agents in the exhausted air, spent deactivation gas, and deactivation gas in order to return the space to useful activity more quickly (page 14, lines 15-38; page 15, lines 1-7). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Wasinger to include the step of exhausting air, spent deactivation gas, and deactivation gas from the space and trapping any entrained biological or chemical agents in the exhausted air, spent deactivation gas, and deactivation gas in order to return the space to useful activity more quickly as exemplified by McVey.

9. Claims 6 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wasinger (U.S. Publication No. 2003/0143108) in view of Samuel et al. (U.S. Patent No. 5,399,314).

Concerning claims 6 and 26, Wasinger is relied upon as set forth above. Wasinger does not appear to disclose altering a resonance frequency, a capacitance of other electrical property of a sensing element with the deactivation gas to sense said gas. Samuel discloses a method of deactivating agents in a space by introducing a deactivating gas to the space and sensing a concentration of the deactivation gas with a

sensing means (column 1, lines 10-22; column 2, lines 56-68). The reference continues to disclose that the sensing step includes passing the decontamination gas over a coating on at least one surface of a piezoelectric resonator having a characteristic resonance frequency (column 10, lines 10-50), which coating interacts with the deactivation gas and changes the resonance frequency of the resonator in accordance with a concentration of the deactivation gas (column 3, lines 37-62; column 4, lines 4-15), and determining the concentration of the deactivation gas from the changed resonance frequency (column 3, lines 5-35) in order to eliminate the supply of excessive deactivating vapor concentrations to the space (column 3, lines 36-47). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sensing step of Wasinger to include the step of passing the decontamination gas over a coating on at least one surface of a piezoelectric resonator having a characteristic resonance frequency, which coating interacts with the deactivation gas and changes the resonance frequency of the resonator in accordance with a concentration of the deactivation gas, and determining the concentration of the deactivation gas from the changed resonance frequency, in order to eliminate the supply of excessive deactivating vapor concentrations to the space as exemplified by Samuel.

10. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wasinger (U.S. Publication No. 2003/0143108) in view of McVey (International

Publication No. WO 02/066082) as applied to claim 8 above, and further in view of Adams et al. (U.S. Publication No. 2005/0175500).

Adams is relied upon as set forth above. Adams does not appear to disclose that the vaporizing step is performed at portable generators movably placed within the space. Adams discloses a method of deactivating biological agents in a large space by introducing a deactivation gas in said space by vaporization, circulating the deactivation gas throughout said space, and monitoring the concentration of the gas with sensors (paragraphs 14-19). The reference continues to disclose that the vaporizing step is performed at portable generators movably placed within the space in order to eliminate the need for excessive piping and reduce energy loss (Figure 11, column 15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Wasinger to include the step of vaporizing the deactivation gas at portable generators movably placed within the space in order to eliminate the need for excessive piping and reduce energy loss as exemplified by Adams.

11. Claims 20 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wasinger (U.S. Publication No. 2003/0143108) in view of McGady et al. (U.S. Patent No. 4,067,691).

Concerning claim 20, Wasinger is relied upon as set forth above. Wasinger does not appear to disclose automatically closing doors to isolate the space from the environment before introducing the deactivation gas. McGady discloses a method of

deactivating chemical and biological agents in a large volume space by isolating said space and introducing a deactivating agent into said space (column 2, lines 20-45).

McGady continues to disclose that the isolating step includes automatically closing doors to isolate the space from the environment before introducing the deactivating agent (column 3, lines 25-50) in order to isolate a contaminated area with contaminated items during the sterilization process. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Wasinger to include automatically closing doors in said method in order to isolate a contaminated area with contaminated items from the environment during the sterilization process as exemplified by McGady.

With regard to claim 30, Wasinger discloses a method of deactivating biological agents in a large volume space with a convoluted configuration (Figure 1), the method comprising in response to a contamination event, with a computer;

Introducing deactivation gas into each of a plurality of subregions of the space, which subregions are physically interconnected such that air flows freely between the subregions (paragraphs 16, 22 and 23);

Circulating the deactivation gas between and within each subregion and controlling circulation of the deactivation gas and air from one subregion to adjoining subregions (paragraph 22); and

Continuing introducing and circulating the deactivation gas and air to deactivate the biological or chemical agents in the space (See paragraphs 16-29). Wasinger does not appear to disclose closing portals into the space to seal the space from the

surrounding environment. However, as set forth above with respect to claim 20, McGady discloses closing portals into the space to seal the space from the surrounding environment (column 3, lines 25-50) in order to isolate a contaminated area with contaminated items during the sterilization process. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Wasinger to include the step of closing portals into the space to seal the space from the surrounding environment in order to isolate a contaminated area with contaminated items during the sterilization process as exemplified by McGady.

12. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wasinger (U.S. Publication No. 2003/0143108) in view of McVey (International Publication No. WO 02/066082) as applied to claim 14 above, and further in view of Sulakvelidze et al. (U.S. Patent No. 6,699,701).

Wasinger is relied upon as set forth above; Wasinger discloses a method of deactivating a chemical or biological agent in a large volume space by the introduction of a deactivation gas with a dispersing mechanism (HVAC system). However, the reference does not appear to disclose that the large space is an airport concourse. Sulakvelidze discloses a method of deactivating a chemical or biological agent in a large volume space by the introduction of a deactivation gas with a dispersing mechanism (column 10, lines 35-65). The reference continues to disclose a plurality of large spaces that are conventionally well known that become decontaminated with a biological or chemical agent including theaters, concert halls, train stations and airports

(column 24, lines 1-10). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the decontaminating method of McVey in a large space such as an airport, as airports are conventionally well known areas in need for decontamination as exemplified by Sulakvelidze. Concerning claim 23, as noted by the Applicant in the reply filed on July 23, 2009, claim 23 is generic to claim 22 wherein airport concourses include a wing of a building with corridors, individual offices or rooms, cubicles or laboratories. As such, the limitations are met with respect to Sulakvelidze as well.

13. Claim 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wasinger (U.S. Publication No. 2003/0143108) in view of McVey (International Publication No. WO 02/066082) as applied to claim 14 above, and further in view of Samuel et al. (U.S. Patent No. 5,399,314).

Concerning claims 25 and 28, Wasinger is relied upon as set forth above. Wasinger does not appear to disclose that the sensing step includes passing the decontamination gas over a coating on at least one surface of a piezoelectric resonator having a characteristic resonance frequency, which coating interacts with the deactivation gas and changes the resonance frequency of the resonator in accordance with a concentration of the deactivation gas, and determining the concentration of the deactivation gas from the changed resonance frequency. Samuel discloses a method of deactivating agents in a space by introducing a deactivating gas to the space and sensing a concentration of the deactivation gas with a sensing means (column 1, lines

10-22; column 2, lines 56-68). The reference continues to disclose that the sensing step includes passing the decontamination gas over a coating on at least one surface of a piezoelectric resonator having a characteristic resonance frequency (column 10, lines 10-50), which coating interacts with the deactivation gas and changes the resonance frequency of the resonator in accordance with a concentration of the deactivation gas (column 3, lines 37-62; column 4, lines 4-15), and determining the concentration of the deactivation gas from the changed resonance frequency (column 3, lines 5-35) in order to eliminate the supply of excessive deactivating vapor concentrations to the space (column 3, lines 36-47). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sensing step of Wasinger to utilize a step that includes passing the decontamination gas over a coating on at least one surface of a piezoelectric resonator having a characteristic resonance frequency, which coating interacts with the deactivation gas and changes the resonance frequency of the resonator in accordance with a concentration of the deactivation gas, and determining the concentration of the deactivation gas from the changed resonance frequency in order to eliminate the supply of excessive deactivating vapor concentrations to the space as exemplified by Samuel.

Response to Arguments

14. Applicant's arguments filed January 14, 2010 have been fully considered but they are not persuasive.

Applicant argues that:

a) Claim 1 further calls for circulating the deactivation gas from subregion to adjoining subregions. Wasinger does not disclose circulating the ozone gas from one floor to an adjoining floor(s). The only air movement between floors is when exhausted air from returns 12-15 is drawn from each floor and intermixed by the HVAC system to be blended and redistributed among the floors. Such circulation does not describe circulating the ozone gas from one floor to an adjoining floor.

As set forth in Wasinger, the building (mailroom or office; paragraph 15) comprises a plurality of offices (paragraph 23) wherein the offices will intrinsically produce interconnected subregions that are open in a manner that allows air flow between subregions. Even if every door to every office in the building is closed, said doors are provided with an airflow passageway at the bottom. Therefore, the limitations are met with respect to Wasinger concerning circulating the gas from subregion to adjoining subregions.

b) Claim 1 further calls for, based on sensed concentrations of the deactivating gas, controlling both the introducing of the deactivation gas and the circulation of the deactivation gas from subregion to adjoining subregion. Wasinger does not disclose both controlling the introduction of ozone and controlling the circulation of the ozone from floor to floor to maintain the ozone concentration on each floor within tolerances.

Deactivation gas is provided to each floor through the HVAC system by flooding said floor with the deactivation gas (paragraph 23). This is disclosed by the fact that the monitors are specifically placed at the farthest point from the deactivation gas in order to

ensure that the entire space is provided with the deactivation gas. The deactivation gas is introduced to each floor and controlled based on the monitored deactivation gas in each floor by a processor, wherein the processor controls the HVAC unit to circulate the deactivation gas (paragraph 23). As such, the deactivation gas is controlled and the circulation of the deactivation gas is controlled on each floor wherein each floor is provided with offices to create subregions in each floor. Furthermore, the method and system provides the deactivation gas in an amount that decontaminates biological agents while preserving the integrity of the contents in the space (paragraph 16). Thus, the deactivation gas is provided in a preselected minimum amount to disinfect biological agents and a preselected maximum amount to preserve the contents in the space. As such, the limitations are met with respect to Wasinger.

c) Claim 29 calls for a computer which performs a flow dynamics modeling routine and which controls fans in accordance with the flow dynamics modeling routine. McVey '082 makes no mention of flow dynamics modeling. Wasinger fails to cure this shortcoming of McVey. Rather than using flow dynamics modeling, Wasinger appears to treat each floor as a separate volume to be disinfected. There is no suggestion of flow between the floors of the building of Wasinger of a nature that is controllable or otherwise amenable to flow dynamics modeling. Moreover, Wasinger does not disclose fans, much less fans which are controlled in accordance with a flow dynamics modeling routine.

As disclosed on page 15, line 10 to page 16, line 20; McVey discloses a flow dynamics modeling routine as broadly defined. The reference discloses that a number of conditions are monitored including air flow and turbulence, wherein said monitored conditions are compared to a reference signal and utilized in an algorithm implementing program in order to control the concentration of the deactivating gas in the space.

Therefore, the limitations are met with respect to McVey.

d) Claim 30 calls for a method of deactivating biological or chemical agents in a large volume space with a convoluted configuration. The building 40 of Wasinger has four discrete floors. None of the floors of Wasinger or the building are described as having a convoluted configuration. Having the convoluted configuration is an issue because it can defeat the disinfection process of Wasinger or McVey. Wasinger and McVey each treat the target volume as a unit. Due to the convoluted configuration, the large volume space is not readily amenable as being treated as a unitary space, raising issues regarding how to assure that the various nooks and crannies of the convoluted configuration are, in fact, treated. Claim 30 further calls for controlling the circulation of the deactivation gas and air from one subregion to adjoining subregions. In Wasinger, the building 40 has four discrete floors. There is no disclosure of controlling the circulation of the ozone and air from one of the floors to an adjoining floor.

Wasinger discloses that the building is a mailroom or office building, which meets the limitations of the large space (paragraph 16). The reference also states that the building **is provided with offices in the building** (paragraph 23), which will create a

convoluted configuration in the building. Thus, the limitations are met with respect to Wasinger.

Further, as set forth in Wasinger, the building (mailroom or office; paragraph 15) comprises a plurality of offices (paragraph 23) wherein the offices will intrinsically produce interconnected subregions that are open in a manner that allows air flow between subregions. Wasinger also discloses that the circulation of the gas is controlled on each floor (paragraph 23). Even if every door to every office in the building is closed, said doors are provided with an airflow passageway at the bottom. Therefore, the limitations are met with respect to Wasinger concerning circulating the gas from subregion to adjoining subregions.

e) Claim 11 has been amended to parallel the amendments made to claim 1. It is again submitted that the Examiner's search from claim 1 has provided a full and complete search for the apparatus of claim 11. It is requested that the Examiner reconsider the Restriction Requirement and allow claim 11 along with claim 1.

As set forth in the beginning of this Office Action, this Application is a National Stage entry of PCT/US05/09653 and is subject to PCT rules and regulations, most notably PCT 13.1 and 13.2 (See MPEP 1896 IV and 37 CFR 1.475). Under these guidelines, a group of inventions must relate to a single general inventive concept under PCT 13.1, because under PCT Rule 13.2, they must contain the same or corresponding special technical feature, wherein a special technical feature is defined as meaning

those technical features that define over the prior art. For further information, please see pages 2 and 3 of this Office Action.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN C. JOYNER whose telephone number is (571)272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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